

Listing of the claims:

Claims 1-12 canceled

Claim 13 (currently amended). A computer implemented method for creating or manipulating one or more drawings or sets of formatted data representing a physical environment, comprising the steps of:

- a) using a computer for creating, ~~and~~ formatting, and editing ~~or manipulating~~ one or more objects based on pre-existing data stored within the computer, the one or more objects defining an environment in which an in-building or campus communications network may be deployed, said environment having at least one of floors, walls, partitions, buildings, building complexes or compounds, terrain, foliage, or other sites or obstructions;
- b) grouping a number of said one or more objects into at least one editable layer;
- c) verifying, using a computer, the sufficiency of said one or more objects to ensure a useful definition of said environment and notifying a user of results of said verification of sufficiency;
- d) automatically generating at least one formatted drawing or at least one set of formatted data containing computer representations of said grouping of one or more objects in a form transportable to and usable by a communications engineering or network management application; and
- e) rendering a three-dimensional (3-D) view of said environment by simultaneously converting the grouping of one or more objects from the at least one editable layer into 3-D obstructions within the 3-D view.

Claim 14 (previously presented). The method of claim 13 further comprising the step of adding or editing at least one object in said at least one editable layer or in said at least one formatted drawing or in at least one set of formatted data.

Claim 15 (previously presented). The method of claim 13 further comprising the step of moving at least one object in said at least one editable layer or in said at least one formatted drawing or in at least one set of formatted data.

Claim 16 (previously presented). The method of claim 13 further comprising the step of modifying at least one object in said at least one editable layer or in said at least one formatted drawing or in at least one set of formatted data.

Claim 17 (previously presented). The method of claim 13 wherein said step of a) includes the step of removing extraneous objects from said one or more objects or from said at least one formatted drawing or from at least one set of formatted data.

Claim 18 (previously presented). The method of claim 13 wherein said step a) includes the step of tracing and adding a traced object or said one or more objects or to said at least one formatted drawing or to at least one set of formatted data.

Claim 19 (previously presented). The method of claim 13 wherein said step a) includes the step of modifying one or more objects or one of electrical properties, physical properties, aesthetic properties, or spatial configurations of one or more objects.

Claim 20 (previously presented). The method of claim 13 wherein said notifying performed in said verifying and notifying step is performed in an automatic fashion without feedback being provided to the user.

Claim 21 (previously presented). The method of claim 13 wherein said notifying performed in said verifying and notifying step is performed by prompting the user and, when required to provide said useful definition, requires the user to correct any insufficiencies in response to an insufficiency notification.

Claim 22 (previously presented). The method of claim 13 wherein said communications engineering or network management application is selected from the group consisting of wireless propagation models, measurement tools, component placement or layout visualization tools, optimization tools, bill of materials generating tools, asset management tools, and network performance management or prediction tools.

Claim 23 (previously presented). The method of claim 13 further comprising the step of scaling at least part of said at least one formatted drawing or said at least one set of formatted data or at least one object of said one or more objects.

Claim 24 (previously presented). The method of claim 13 further comprising the step of adding measurement data to said at least one or said one or more objects or said at least one formatted drawing or said at least one set of formatted data.

Claim 25 (previously presented). The method of claim 13 further comprising the step of specifying or invoking a propagation model for performing predictions of performance.

Claim 26 (previously presented). The method of claim 13 further comprising the step of specifying or invoking a listing of communications equipment.

Claim 27 (currently amended). An apparatus for creating or manipulating one or more drawings or sets of formatted data representing a physical environment, comprising:

computer implemented means for creating, ~~and~~ formatting, and editing ~~or~~ manipulating one or more objects based on pre-existing data stored within the computer, the one or more objects defining an environment in which an in-building or campus communications network may be deployed, said environment having at least one of floors, walls, partitions, buildings, building complexes or compounds, terrain, foliage or other sites or obstructions;

means for grouping a number of objects into at least one editable layer;
means ~~of~~ for verifying, using a computer, the sufficiency of said one or more objects to ensure a useful definition of said environment and notifying a user of results of said verification of sufficiency;

means ~~of~~ for automatically generating at least one formatted drawing or at least one set of formatted data containing computer representations of said grouping of one or more objects in a form transportable to and usable by a communications engineering or network management application; and

means ~~of~~ for rendering a three dimensional (3-D) view of said environment wherein the grouping of one or more objects of the at least one editable layer are simultaneously converted into 3-D obstructions within the 3-D view.

Claim 28 (previously presented). The apparatus of claim 27 further comprising a means for adding or editing at least one object in said at least one editable layer or in said at least one formatted drawing or said at least one set of formatted data.

Claim 29 (previously presented). The apparatus of claim 27 further comprising a means for moving at least one object in said at least one editable layer or in said at least one formatted drawing or said at least one set of formatted data.

Claim 30 (previously presented). The apparatus of claim 27 further comprising a means for modifying an object in said at least one editable layer or in said at least one formatted drawing or said at least one set of formatted data.

Claim 31 (previously presented). The apparatus of claim 27 further comprising a means for removing extraneous objects from said one or more objects or from said at least one formatted drawing or from at least one set of formatted data.

Claim 32 (previously presented). The apparatus of claim 27 further comprising a means for tracing and a means for adding a traced object to said one or more objects or to said at least one formatted drawing or to said at least one set of formatted data.

Claim 33 (previously presented). The apparatus of claim 27 further comprising a means for modifying one or more objects or one or more of electrical properties, physical properties, aesthetic properties, and spatial configurations of one or more objects.

Claim 34 (previously presented). The apparatus of claim 27 wherein notifying performed by said means for verifying and notifying is performed in an automatic fashion without feedback being provided to the user.

Claim 35 (previously presented). The apparatus of claim 27 wherein notifying performed by said means for verifying and notifying is performed by prompting the user and, when required to provide said useful definition, requires the user to correct any insufficiencies in response to an insufficiency notification.

Claim 36 (previously presented). The apparatus of claim 27 wherein said communications engineering or network management application is selected from the group consisting of wireless propagation models, measurement tools, component placement or layout visualization tools, optimization tools, bill of materials generating tools, asset management tools, and network performance management or prediction tools.

Claim 37 (previously presented). The apparatus of claim 27 further comprising a means for scaling at least part of said at least one formatted drawing or said at least one set of formatted data or at least one object of said one or more objects.

Claim 38 (previously presented). The apparatus of claim 27 further comprising a means for adding measurement data to a least one of said one or more objects or said at least one formatted drawing or said at least one set of formatted data.

Claim 39 (previously presented). The apparatus of claim 27 further comprising means for specifying or invoking a propagation model for performing predictions of performance.

Claim 40 (previously presented). The apparatus of claim 27 further comprising a means for specifying or invoking a listing of communications equipment.